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Teaming to Tackle Fatigue and Maximize Alertness

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This chapter describes the process of building and maintaining a successful fatigue and alertness management policy and program. The process consists of five interrelated elements:

1. Secure and maintain senior management commitment.
2. Policy and program development.
3. Communication and training.
4. Manage fatigue and alertness.
5. Monitor, review and modify.

Figure 4 shows the fatigue and alertness program management process as a flow chart diagram. Table 1 indicates the toolbox components that can be employed in each element of the fatigue management program.

Secure and Maintain Senior Management Commitment

A fatigue/alertness management program needs visibility and support at the highest management levels in the organization in order to be successful. Ideally, the chief executive and board of the transit enterprise should define and document their fatigue/alertness management policy to provide the foundation for the organization to tackle fatigue and manage alertness.

Commitment from senior management is absolutely critical to developing a successful program. In some cases, securing and maintaining that commitment will be easy. In other cases, the staff of the enterprise may need to brief the chief executive and board regarding the role employers should play in maintaining proper levels of alertness among operators. Information to support this briefing for senior management may be developed from this toolbox or by working with an outside expert. (See “Why Transit Operator Fatigue Is Important” in Chapter 1.)

Objectives should be stated clearly. For example, a typical objective might be: *improving safety and efficiency in the transit organization by cooperating with the workforce to reduce fatigue and maximize alertness in the workplace.* After senior management provides policy direction, it should move into an ongoing support and oversight role in the following manner:

- Demonstrate a commitment to alertness management and ensure that the policy is understood, implemented and maintained at all levels in the organization.

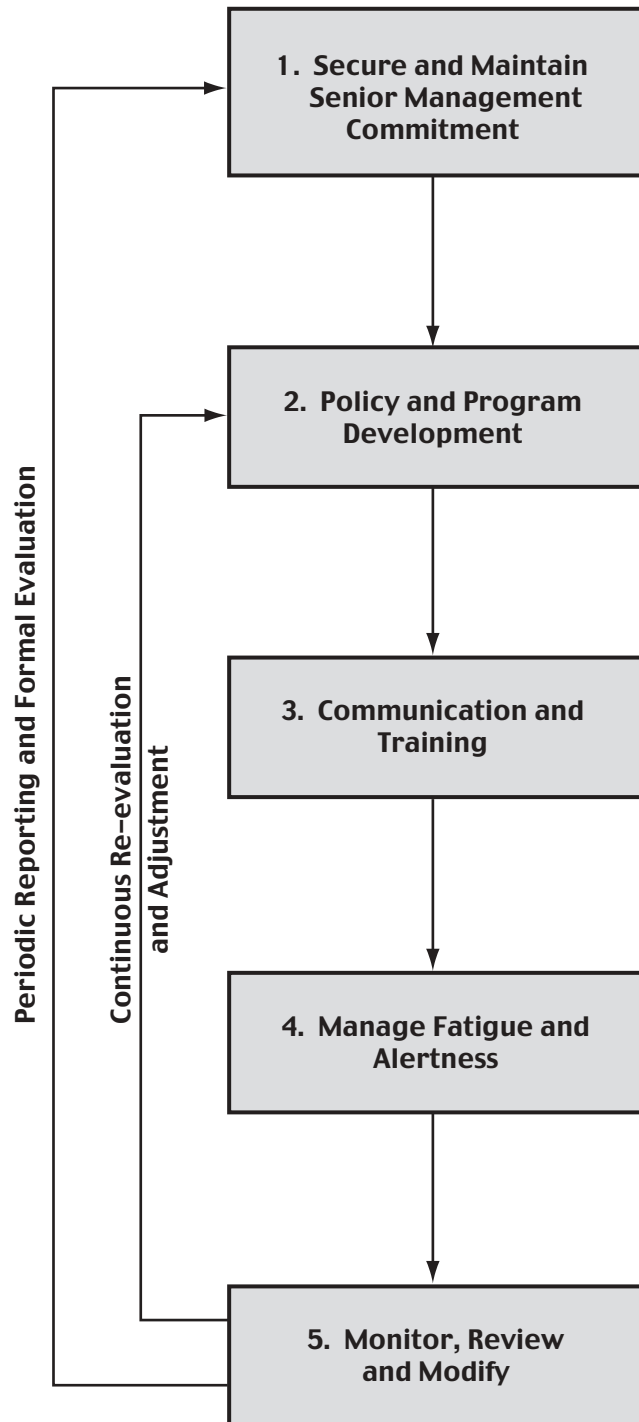


Figure 4. Fatigue and alertness program management process diagram

Table 1.
Relationship of
toolbox components
to fatigue
management
program elements

Program Element	Toolbox Component
Secure and Maintain Senior Management Commitment	"Why Transit Operator Fatigue Is Important," Chapter 1 "Success Stories," Appendix C
Policy and Program Development	"Understanding Human Fatigue," Chapter 3 "Tools You Can Use," Chapter 5 "Glossary," Appendix A "Success Stories," Appendix C "Organizational Resources," Appendix D
Communication and Training	Posters and newsletter articles on CD
Manage Fatigue and Alertness	"Tools You Can Use," Chapter 5
Monitor, Review and Modify	"Tools You Can Use," Chapter 5 "Fatigue Tools of Tomorrow," Appendix B

- Delegate to agency staff the responsibility and authority to develop, maintain, execute and evaluate the fatigue management program.
- Receive and review fatigue/alertness program reports at regular intervals so the program can be modified/improved as needed.

Policy and Program Development

Once senior management has established an initial policy objective, empowered agency staff and labor representatives need to work out the details of the policy and program for their agency. Experience has shown that a participative process for developing the fatigue and alertness management policy and program produces the most successful results. The program team should include representatives of both management and labor. Management representatives may include, but not be limited to, the operations, human resource/labor relations, and safety departments. Labor representatives should include both labor leadership and rank-and-file representatives of affected labor classifications.

Success Story

In late 1997 the Federal Railroad Administration invited representatives of both labor and management in the railroad industry to form the North American Rail Alertness Partnership (NARAP) to address fatigue issues. NARAP meets on a regular basis to share the results of current scientific research and to discuss experiences of pilot projects in the railroad industry. NARAP members find this to be a valuable forum, not only for discussion of issues but also for sharing experiences.

The team must develop their enterprise's fatigue and alertness management policy and its framework for managing fatigue and alertness. Senior management must ultimately endorse this policy, but they do not need to be encumbered with working out the details. The team should be responsible for developing the details of the organization's policy and program. The policy may include:

- Statement of goals and objectives.
- Responsibilities and authority for managing fatigue and alertness in the workplace.
- Documentation of the support and expertise available to the program.
- Policies regarding employee alertness and fatigue, including possible disciplinary action for failure to maintain satisfactory levels of alertness on the job.
- Plan for reporting and reviewing organizational progress toward fatigue/alertness goals.

The policy development process will require the program team to educate themselves and senior management on fatigue issues. (Chapter 3 of this toolbox contains a suitable overview of human fatigue issues.) In that regard, this toolbox can be an invaluable information resource. The team may also need outside expertise in steering program development and in the education of senior management. The program team may also find it useful to develop partnerships or liaisons with other properties that have already developed and implemented fatigue and alertness management policies and programs.

As stated earlier, the program team must be empowered to decide which issues to address and then to develop the organization's program of appropriate countermeasures. (Recommended countermeasures are described in Chapter 5.) In preparing the policy and program, the team will need to evaluate the work environment and assess the corporate climate relative to making changes that address fatigue issues. All recommended countermeasures are not necessarily appropriate at every work site. The program team may wish to consider only alternatives and countermeasures that are "pay and cost neutral." The program team may also decide to focus initially on measures that do not

The program team should assemble baseline information for use in periodic program evaluation.

require a change in the agency's work rules or collective bargaining agreements.

In deciding which countermeasures and strategies will work best for their organization, the program team will need to consider what changes in work rules, collective bargaining agreements and corporate policies would be required. For example, if the agency rules prohibit sleeping on agency property, the implementation of a napping facility will require a rule change. In some cases, the program team may choose to defer or avoid certain recommended countermeasures because they would create a conflict with long-standing agreements between labor and management. In these cases, the program team may wish to educate senior management and labor executives concerning these conflicts and identify adjustments in work rules and collective bargaining agreements that would support fatigue and alertness goals.

Both to help establish credible goals and objectives and to measure progress toward those goals, the program team should assemble baseline information for use in periodic program evaluation. Baseline information might include:

- Overtime charges – hours per operator.
- Absenteeism – sick time per employee.
- Overall safety measures.
 - On-duty employee injuries per hours worked.
 - Accidents per 100,000 vehicle-miles.
 - Vehicle maintenance patterns.
 - Discipline for safety rule violations.
 - Accidents/incidents where fatigue was a causal factor.
- Management and work practices.
 - Is fatigue considered in contract negotiations?
 - Is fatigue considered as a possible causal factor when investigating accidents and employee injuries?
 - Are schedulers considering fatigue when designing schedules?
 - Are crew callers or supervisors considering fatigue when filling vacancies?
 - Are supervisors mindful of fatigue symptoms when an employee reports for duty?
 - Is screening for sleep disorders a part of the new hire physical?

- Does the new hire recruitment process set realistic expectations for operator candidates regarding hours of work?
- Assessment of operator alertness.
 - Sleep Debt Index.
 - Anecdotal information.

The Sleep Debt Index (see “Managing Personal Habits and Behaviors” in Chapter 5) provides a simple method to gauge the alertness of operators. This tool can be distributed to all operators with instructions to complete the survey and return it anonymously. Examining the sleep debt indexes for the workforce will give an indication of overall operator alertness in the organization. If it is not possible to collect Sleep Debt Index data, an alternative but less reliable method is to confer with supervisors regarding their assessments of operator alertness levels.

Communication and Training

Careful, but vigorous, communication is critical when “rolling out” the new policy in the workplace. Once the policy and program have been adopted, they must be communicated to the organization. At this stage, outreach is required to inform employees of the renewed commitment to safety by working to manage fatigue and maximize alertness in the workplace. Ideally fatigue and alertness become common considerations in management and line supervision of transportation operators. To achieve this heightened consciousness of fatigue an initial outreach and ongoing training program are required. The CD that accompanies this toolbox contains posters and newsletter articles that can be used by the transit enterprise for publicizing their fatigue and alertness programs.

Specific fatigue countermeasures become operational at this stage. The first activity is usually training for all stakeholder groups. A fatigue awareness training program for operators typically should cover principles of sleep and fatigue and the performance consequences of inadequate rest. Training on techniques and strategies to minimize the risk of fatigue on the job is another important topic to include. This type of training is usually 1 to 2 hours in length and includes the following topics:

- Why operator fatigue is a concern.
- Definition of fatigue, its symptoms and causes.

- Sleep structure – stages of sleep, sleep quality, sleep debt.
- Measuring personal fatigue – the Sleep Debt Index.
- Circadian rhythms.
- Shiftwork effects.
- Relationship between work, off-time and fatigue.
- Drugs/substances that affect sleep and alertness.
- Sleep disorders.
- Personal strategies for maintaining alertness on the job.

Training for management includes a briefer, higher level discussion of the above topics as well as:

- Identification of fatigue-related incidents/accidents and associated costs.
- Agency policy and operational strategies for managing fatigue.

The following training strategies have proven successful:

- Consider an outside trainer for senior management but use on-property trainers for operations supervisors and employees.
- Provide education during paid duty time.
- Reinforce training with periodic updates (e.g., bulletins, refresher courses, agency newsletters).

Overall, the fatigue and alertness management program will benefit from open lines of communication among all stakeholders including labor, line supervisors, middle managers and senior management. Providing information to families of employees can stimulate or reinforce the employee's willingness to focus attention on this important issue.

Manage Fatigue and Alertness

Day-to-day management of the fatigue and alertness program is the responsibility of all members of the transit enterprise, both labor and management.

Having “talked the talk” of commitment to fatigue and alertness issues, the enterprise must now “walk the walk.” Line supervisors

and schedulers need to explicitly consider fatigue and alertness issues in conducting their work. Line supervisors and operators need to discuss sleep hygiene and the operator's obligation to report to work rested and ready for duty. Employees with symptoms of chronic fatigue must be counseled. Where there are cases of acute fatigue, line supervision must act within the guidelines provided by senior management. Senior management and labor relations must support line supervision when they enforce guidelines regarding symptoms of acute fatigue among vehicle operators. At first these actions may seem awkward and forced, but when the organization is making a genuine commitment towards managing fatigue and alertness, these new perspectives and regimens will be present every day at the bus garage, car barn and transit terminal.

Ongoing training and feedback are key elements in effective fatigue and alertness management. Intensive initial training is important, but it does not permanently immunize the entire organization against problems with fatigue and alertness. Remember, new employees will require training. Veteran operators will need additional fatigue training as part of periodic agency refresher training. Just as importantly, employees will be promoted from labor into management. Therefore, ongoing management training on the policies, philosophy and techniques of the organization's fatigue and alertness management program is critical to success.

Monitor, Review and Modify

Management is a process, not a goal. To effectively manage any program, ongoing monitoring, evaluation and adjustment are required. The need to measure and maintain holds true for fatigue and alertness management. Ongoing evaluation is necessary to determine if a program remains effective and relevant. Circumstances change and the periodic review of previous decisions and long-standing policies is essential to organizational vitality.

Both internal and external changes in the fatigue environment must be considered. Internally, management should be concerned with the ongoing progress and effectiveness of the enterprise's own fatigue and alertness management program. Over time they should be sensitive to changes in workforce demographics and operations that will require changes in the fatigue management plan. Externally, management should be vigilant concerning

Data relating to safety, fatigue and alertness should be assembled and published for senior management review.

changes in the environment that may affect the operator's work, rest and recovery cycles and also monitor the science and technology of fatigue and alertness management for effective new tools and techniques.

Internal indications of program and policy effectiveness can be derived in many ways including:

- Informal feedback from stakeholders.
- Review of attendance, safety and financial records.
- Formal before/after subjective and physiological ratings.
- Ability to meet contractual (or statutory) work and rest requirements.

At periodic intervals (perhaps annually) data relating to safety, fatigue and alertness should be assembled and published for senior management review and broad organizational visibility. Reports should include analyses of trends in the baseline statistics collected during program planning (see the Develop Policy and Program subsection), as well as a summary of the number and percentage of the workforce that has participated in fatigue awareness training. The reports should note trends in the frequency of incidents and accidents where fatigue was a causal factor. The reports may also contain anecdotal elements relating to reported changes in personal habits. The team may also consider a survey of operators designed to see if changes in sleep habits and other behaviors can be documented.

Staff responsible for managing the safety function of the transit enterprise should not only monitor this "internal scan" of program effectiveness but also maintain an "external scan" of developments in the environment that may change the fatigue and alertness management program. In particular, the organization should be vigilant concerning emerging technologies and state-of-the-art fatigue research. Valuable new countermeasures to identify and combat fatigue and to augment alertness may become available in the future. (See Appendix B for a description of countermeasures currently under development.)

When the report is presented to senior management it should include specific recommendations relative to the scope and focus of the policy and program. Is the program having the desired

impact on the organization? Are some program elements proving ineffective? Are some program elements very effective? Are any elements of the policy unworkable or unenforceable? Have problems occurred? What is the program costing? How much has it saved us? Each of these questions should be addressed in the periodic report with recommendations for changes in the policy and program necessary to correct deficiencies and better focus the flow of resources to strategies and countermeasures that seem the most effective at this transit enterprise. During the next reporting cycle, the program team should specifically consider the effectiveness of any changes in the program or policy that were directed by senior staff.